

IN THE CLAIMS:

Please enter the following amended claims:

*b1
b2
b3
C1*

1. (Currently Amended) A wavelength-tunable laser comprising: including
a first resonant cavity containing an optical amplifier medium; and
a pair of opposed reflector members which define the first resonant cavity;
a second resonant cavity; and
a reflector external to said first resonant cavity, delimiting ~~a~~the second resonant cavity
thereinbetween, and selectively reflecting having reflectivity peaks for an integer number N of
optical frequencies, wherein in which laser said first cavity is formed of two opposed reflector
members that are not wavelength selective and delimit an amplifying first active section coupled
to a phase tuning second active section, each of said two active sections is adapted to be
connected to an its own electrical supply, said second having has active section having an
effective group index that can be adjusted electro-optically as a function of an electrical voltage
applied to it, and said first and second active sections having have dimensions such that a the
difference between the optical frequencies of any two resonant modes of said first resonant
cavity is never equal to a the difference between the optical frequencies of any two selectively
reflected frequencies reflectivity peaks of said reflector, and second active section modifying an
optical length of said first resonant cavity to provide for a selective coincidence of only one
optical frequency between the resonant modes of said first resonant cavity and the selectively
reflected frequencies of said reflector.

2. (Currently Amended) The wavelength-tunable laser claimed in claim 1 wherein the
difference between any two adjacent reflected optical frequencies of reflectivity peaks is constant

AMENDMENT UNDER 37 C.F.R. § 1.111
U. S. Application No. 10/079,875

and the reflected optical frequencies of said reflectivity peaks are interleaved with consecutive optical frequencies of resonant modes.

3. (Currently Amended) The wavelength-tunable laser claimed in claim 2 wherein the ratio of the difference between two adjacent optical frequencies of two resonant modes to the difference between two adjacent reflected optical frequencies of reflectivity peaks is equal to $N/(N-1)$.

4. (Original) The wavelength-tunable laser claimed in claim 1 wherein said external reflector is a waveguide including at least one sampled Bragg reflector grating optically coupled to said first cavity.

5. (Original) The wavelength-tunable laser claimed in claim 4 wherein said waveguide includes a plurality of sampled Bragg reflector gratings and each sample of a first grating, with the possible exception of a first of them or a last of them, is between two consecutive samples of a second grating.

6. (Previously Amended) The wavelength-tunable laser claimed in claim 4 wherein a sampled Bragg grating of said waveguide has a pitch that is not constant.

7. (Previously Amended) The wavelength-tunable laser claimed 1 wherein said first cavity is formed between a first outside face of said first section and an outside face of said second section.

8. (Previously Amended) The wavelength-tunable cavity claimed 1 wherein said first cavity is formed between a first outside face of said first section and an entry face of said reflector.

AMENDMENT UNDER 37 C.F.R. § 1.111
U. S. Application No. 10/079,875

9. (Previously Amended) The wavelength-tunable laser claimed in 1 wherein the variation of the effective group index of said phase tuning second active section is obtained by a Stark quantum confinement electro-optical effect.

10. (Previously Amended) The wavelength-tunable laser claimed in 1 wherein the variation of the effective group index of said phase tuning second active section is obtained by a Stark quantum confinement electro-optical effect.

Please add the following new claim:

b2
John C. C.

11. (New) The wavelength-tunable laser claimed in claim 1 wherein the electrical supply of the second active section modifies the effective group index of said second active section to change the optical length of the first resonant cavity and slip a comb of said resonant modes of said first resonant cavity.
